

Survey on Equipment and Use of Information and Communication Technologies in Households

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2 Metadata update

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3 Statistical presentation

3.1 Data description

The Survey on Equipment and Use of Information and Communication Technologies in Households (ICT_H), **it was co-funded by the European Union**, is a panel-type research focusing on people aged 16 and over living in family homes, which collects annual information on ICT products in households (fixed and mobile telephone, computer, Internet...) and the degree and form in which people use these, especially with regards to the use of the Internet, e-government, and e-commerce.

This information is broken down by demographic variables: sex, age, size of the municipality of residence, type of home, and Autonomous Community of residence and socioeconomic variables: monthly net household income, nationality, level of education, employment, and professional situation and main occupation.

It is a sampling survey in which the first stage units are the census tracts. The second stage units are the main family dwellings. In the third stage, a person aged 16 or over is selected from each dwelling.

Likewise, information is also obtained for all children aged 10 to 15 in the dwelling and about the age group of people aged 75 and over.

3.2 Classification system

Clasificaciones utilizadas

For the education level, the 2014 National Classification of Education (CNED-2014) is used to the level of one digit to break down the information into:

- Illiterate and incomplete primary education studies.
- Primary Education
- First stage of Secondary Education and similar
- Second stage of Secondary Education and similar (Spanish Baccalaureate and Intermediate Vocational Training)
- Post-secondary non-tertiary education
- Higher Vocational Training and university non-official diploma and degree courses with a duration of 2 years or more
- University degrees of 240 ECTS (Bologna) credits, short-cycle degree graduates, university own qualifications of expert or specialist level and similar

- University degrees of over 240 ECTS (Bologna) credits, long-cycle degree graduates, Master's and specialities in Health Sciences through the residence system and similar

- PhD

- It is not possible to codify

With regards to the employment and professional situation, the data are aggregated according to people's own classification of themselves:

- Employed by others with a fixed-term contract

- Self-employed

- Unemployed

- Students

- Pensioners

- Household work

- Other situation.

The 2011 National Classification of Occupations (CNO-2011) is used to classify those employed as:

- Manual workers (CNO=6,7,8 and 9)

- Non-manual worker (CNO=0,1,2,3,4 and 5)

and also as:

- ICT Worker (CNO=1321, 2325, 27, 38 and 7533)

- Non-ICT Worker (rest)

Classifications by nationality and Autonomous Community follow the INE standards. For the purpose of tabulation by nationality, a distinction is made between people with Spanish nationality (including those who have dual nationality) and those with foreign nationality.

3.3 Sector coverage

All correspond to the classifications used.

The survey includes the sector of main family homes, meaning that collective homes and second-residence homes are outside of its scope.

3.4 Statistical concepts and definitions

Age

Age in years refers to the number of birthdays reached by the reference date, in other words, the age last birthday.

Computer use

Use of IT devices such as desktop computers (PC), laptop computers or pocket computers in their various modalities (PDA, personal digital assistant, palmtop, pocket PC, handheld computer, HHPC, tablets), from anywhere (the dwelling itself, the workplace, the centre of studies, cyber cafés, other households of relatives or acquaintances etc.), for carrying out any type of IT-related activity (looking up information, programs, file management, online browsing, games) during any time period, and whose use may have been both personal and used in the company of others.

E-commerce (EC)

Transactions carried out via networks based on Internet protocols (TCP/IP) or on other telematic networks. The goods and services are hired through these networks, but the payment or delivery of the product may be performed off-line, through any other channel. Orders placed over the telephone, by fax or by written email are not considered e-commerce.

Family dwelling

A dwelling designed to be inhabited by one person or more who do not constitute a group, regardless of the links between them.

Internet use

Use of electronic devices with online data communication access for browsing (searching for or looking up information by going from website to website), via any device allowing access (desktop computers, laptop computers, pocket computers in their various modalities, television with a screen, mobile telephone, games console, etc.), and from anywhere (the dwelling itself, the workplace, the centre of studies, cyber cafés, other households of relatives or acquaintances etc.), during any time period, and whose use may have been both personal and used in the company of others.

Main family dwelling

A family dwelling is considered main when it is used all or most part of the year as the regular residence.

Online shopping (e-commerce)

Commercial exchange of goods and services carried out through Information and Communications Technologies, usually with the support of standardised platforms and protocols using the Internet. In general, from the perspective of households, this includes all purchases, reservations and orders placed for individual (personal) reasons with any medium (desktop computer, laptop computer, hand-held computer, mobile telephone, etc.), whether done so individually or accompanying other persons.

Resident population

The population resident in a given geographical scope is defined as those persons who, on the reference date, have established their usual residence therein.

Sex

Sex refers to the biological sex of the person. According to the WHO, "sex" refers to biological and physiological features defining to men and women, whereas "gender" refers to the roles, behaviour, activities and attributes constructed socially that a specific culture regards as appropriate for men and women. In accordance with this description, the WHO regards "man" and "woman" as sex categories, whereas "male" and "female" are gender categories.

3.5 Statistical unit

Main family households and people aged 16 and over that live in these.

3.6 Statistical population

The survey investigates main family households and people living in these aged 16 or over when being surveyed.

Furthermore, if there are also children aged 10 to 15 in the home, a smaller set of questions are given to them in relation to this topic.

In order to achieve greater comparability with the data published by Eurostat, the results that are presented since the first quarter of 2006 refer to homes inhabited by at least one person aged between 16 and 74 and people from this age group. However, the microdata files provide complete results of the survey's target population.

3.7 Reference area

The geographical scope of the research is comprised of the entire Spanish territory.

3.8 Time coverage

The survey is carried out annually. Results are available from 2002.

However, the methodological recommendations of the European Statistical Office (EUROSTAT) were not embraced until 2006.

3.9 Base period

The base period is 2006, the year in which the survey was converged with European methodology.

4 Unit of measure

4.1 Unit of measure

The unit of measurement of the total column (first column) of the results tables is the number of people and the unit of measurement for the rest of the columns (disaggregation of the total according to different variables) is percentages of the total.

5 Reference period

5.1 Reference period

1. Survey results period: from the 25th of April to the 20th of August.

2. Reference period: generally, the ICT variables reference period is three months prior to the interview. Nevertheless, interactions with public authorities are referred to the last 12 months, and household equipment, Teleworking, and ICT Recycling take the moment of the interview.

Data referred to the period: Anual A: 2022

6 Institutional mandate

6.1 Legal acts and other agreements

The compilation and dissemination of the data are governed by the Statistical Law No. 12/1989 "Public Statistical Function" of May 9, 1989, and Law No. 4/1990 of June 29 on "National Budget of State for the year 1990" amended by Law No. 13/1996 "Fiscal, administrative and social measures" of December 30, 1996, makes compulsory all statistics included in the National Statistics Plan. The National Statistical Plan 2009-2012 was approved by the Royal Decree 1663/2008. It contains the statistics that must be developed in the four year period by the State General Administration's services or any other entity dependent on it. All statistics included in the National Statistics Plan are statistics for state purposes and are obligatory. The National Statistics Plan 2021-2024, approved by Royal Decree 1110/2020, of 15 December, is the Plan currently implemented. This statistical operation has governmental purposes, and it is included in the National Statistics Plan 2021-2024. (*Statistics of the State Administration*).

The ICT_H survey is included in the Community statistics on the information society, therefore it is subject to the following Community regulations:

- Regulation No 808/2004 of the European Parliament and of the Council of the 21st of April 2004 concerning Community statistics on the information society.

- Commission Regulation No 2021/1223 of the 27th of July 2021 implementing the previous Regulation.

This survey was co-funded by the European Union.

For more detail, visit:

<https://www.ine.es/normativa/leyes/UE/minine.htm#30450>

6.2 Data sharing

The exchanges of information needed to elaborate statistics between the INE and the rest of the State statistical offices (Ministerial Departments, independent bodies and administrative bodies depending on the State General Administration), or between these offices and the Autonomic statistical offices, are regulated in the LFEP (Law of the Public Statistic Function). This law also regulates the mechanisms of statistical coordination, and concludes cooperation agreements between the different offices when necessary.

INE collaborates with the Statistics Institute of Catalonia (IDESCAT) in the scope of this Autonomous Community.

There are also collaboration agreements with the Institute of Statistics and Cartography of Andalusia (IECA) and the Government of Aragon for the harmonisation of their respective surveys with that carried out by the INE, which provide microdata from the survey in the scope of their respective Communities. A collaboration agreement has also been signed with Comunidad de Madrid and the City Council of Madrid for the transfer of information disaggregated by their area of competence.

As well as these three Autonomous Communities, eleven other Autonomous Communities' statistics offices receive the survey microdata file under their respective scope.

There is also a collaboration agreement with the Ministry of Economy and Business through the public corporate entity RED.ES for the investigation of certain indicators on the information society included in the Spanish Digital Agenda.

Finally, the completed survey file is sent to Eurostat in order to aggregate the results at the European level for the preparation of the Community survey on the household use of ICT.

7 Confidentiality

7.1 Confidentiality - policy

The Statistical Law No. 12/1989 specifies that the INE cannot publish, or make otherwise available, individual data or statistics that would enable the identification of data for any individual person or entity. Regulation (EC) No 223/2009 on European statistics stipulates the need to establish common principles and guidelines ensuring the confidentiality of data used for the production of European statistics and the access to those confidential data with due account for technical developments and the requirements of users in a democratic society

7.2 Confidentiality - data treatment

INE provides information on the protection of confidentiality at all stages of the statistical process: INE questionnaires for the operations in the national statistical plan include a legal clause protecting data under statistical confidentiality. Notices prior to data collection announcing a statistical operation notify respondents that data are subject to statistical confidentiality at all stages. For data processing, INE employees have available the INE data protection handbook, which specifies the steps that should be taken at each stage of processing to ensure reporting units' individual data are protected. The microdata files provided to users are anonymised.

In the microdata files, the variables that may allow for direct or indirect identification of respondents are removed. Furthermore, personal data and contact data are only available during the information collection stage.

8 Release policy

8.1 Release calendar

The advance release calendar that shows the precise release dates for the coming year is disseminated in the last quarter of each year.

8.2 Release calendar access

The calendar is disseminated on the INEs Internet website ([Publications Calendar](#))

8.3 User access

The data are released simultaneously according to the advance release calendar to all interested parties by issuing the press release. At the same time, the data are posted on the INE's Internet website (www.ine.es/en) almost immediately after the press release is issued. Also some predefined tailor-made requests are sent to registered users. Some users could receive partial information under embargo as it is publicly described in the [European Statistics Code of Practice](#)

9 Frequency of dissemination

9.1 Frequency of dissemination

The data are released annually.

10 Accessibility and clarity

10.1 News release

The results of the statistical operations are normally disseminated by using press releases that can be accessed via both the corresponding menu and the [Press Releases Section](#) in the web

10.2 Publications

All the information relating to the ICT_H survey is published at:

https://www.ine.es/dyngs/INEbase/en/operacion.htm?c=Estadistica_C&cid=1254736176741&menu=ultiDatos&idp=1254735976608

Furthermore, other INE publications such as *España en Cifras (Spain in Figures)* or the *Anuario Estadístico de España (Statistical Yearbook of Spain)* contain information on ICT_H. Furthermore, monographs of Cifras INE (INE Figures) with information from the survey were published.

10.3 On-line database

INEbase is the system the INE uses to store statistical information on the Internet. It contains all the information the INE produces in electronic formats. The primary organisation of the information follows the theme-based classification of the [Inventory of Statistical Operations of the State General Administration](#). The basic unit of INEbase is the statistical operation, defined as the set of activities that lead to obtaining statistical results on a determined sector or subject based on the individually collected data. Also included in the scope of this definition are synthesis preparation.

The database with information from the survey can be accessed through INEbase, in the Science and Technology section, or directly at:

https://www.ine.es/dyngs/INEbase/en/operacion.htm?c=Estadistica_C&cid=1254736176741&menu=ultiDatos&idp=1254735576692

10.4 Micro-data access

A lot of statistical operations disseminate public domain anonymized files, available free of charge for downloading in the INE website [Microdata Section](#)

There are anonymised microdata files available to the public from 2002, comprising the survey's complete information. These files can be downloaded at:

https://www.ine.es/dyngs/INEbase/en/operacion.htm?c=Estadistica_C&cid=1254736176741&menu=resultados&secc=1254736194629&idp=1254735576692

10.5 Other

Users can request specific of tailored data, carried whilst preserving the confidentiality of the data in all cases, through the [Information area](#) at:

<https://www.ine.es/ss/Satellite?c=Page&p=1254735638180&pagename=ProductosYServicios%2FPYSLayout&cid=1254735638180&L=1>

10.6 Documentation on methodology

A description of the methodology is available at:

https://www.ine.es/en/metodologia/t25/t25304506620_en.pdf

10.7 Quality documentation

Fields 10.6 to 17 of this document are the user-oriented quality report for this operation.

On the one hand, a report on the evaluation of non-response has been published annually since 2004. See:

https://www.ine.es/dyngs/INEbase/en/operacion.htm?c=Estadistica_C&cid=1254736176741&menu=metodologia&idp=1254735976608

On the other hand, the sampling errors of the survey's main estimates have been published in the detailed results tables since 2008. See:

<https://www.ine.es/dynt3/inebase/en/index.htm?padre=6084>

Furthermore, to comply with the Community regulation, INE annually prepares a quality report on the ICT-H for Eurostat, which is approved by this body.

11 Quality management

11.1 Quality assurance

Quality assurance framework for the INE statistics is based on the ESSCoP, the [European Statistics Code of Practice](#) made by EUROSTAT. The ESSCoP is made up of 16 principles, gathered in three areas: Institutional Environment, Processes and Products. Each principle is associated with some indicators which make possible to measure it. In order to evaluate quality, EUROSTAT provides different tools: the indicators mentioned above, Self-assessment based on the DESAP model, peer review, user satisfaction surveys and other proceedings for evaluation.

Quality is guaranteed at all stages of the survey with control and error detection mechanisms.

Thus, the ICT_H survey collection applications are designed to ensure maximum quality in the collected information, as the recording of information is intelligent and allows for the detection and correction of range, flow, and inconsistency errors. Furthermore, from the beginning of the collection, detected errors/inconsistencies are analyzed and, they are immediately communicated to all collection centers which may lead to the repetition of some interviews.

There is a continuous platform throughout the collection period for the resolution of all existing methodological doubts. On this platform, any interviewer, interviewer inspector, or survey inspector can raise a doubt or issue arising from the collection process and is immediately responded to by the corresponding service for its resolution.

Furthermore, the response levels are monitored daily at the provincial level to detect any problem with the collection, as well as the main indicators of the survey at the sample level, which are compared with those of the preceding years with the aim of detecting gaps or irregularities in the collection of information, which are immediately communicated to those responsible for collection.

Once the collection is finished, a codification control is carried out, then the erroneous codes are modified and the partial non-response is analyzed, which, in theory, according to the specifications of the collection programs, should be zero, with the exception of household incomes (which are not imputed in order to provide the users with the most primary information possible).

The total non-response in the survey is addressed through the application of calibration techniques.

Once the elevation factors are obtained, the elevated results are compared with those from the previous year in order to detect possible inconsistencies at the macro level.

11.2 Quality assessment

This survey's collection application is fundamental in ensuring its quality. For this reason, every year it is tested to ensure that it does not contain computer errors that would lead to a loss of information or biased information.

Furthermore, as this survey is carried out within the regulatory framework of the European survey, the microdata is submitted to Eurostat's error and inconsistency detection programme, which is designed differently from that applied in INE's collection programmes. This Eurostat programme guarantees that the survey's results do not have any range, flow or inconsistency errors. In other words, the results are submitted to a double control, INE's collection application and the Eurostat programme.

In addition to the internal checks detailed in the results tables, Eurostat provides annually the Y2Y report in which are analysed the inter-annual variations of the submitted files. This guarantees the justification and explanation of the variations in two ways, making the results both coherent and comparable.

Results are released in the three months following the end of the collection which gives an idea of the survey's opportunity as the results from one year are published in that same year.

To avoid an increase in the non-response rate due to respondents' fatigue, the questionnaire is managed so that it follows a logical flow of questions and, in this way, questions that are not needed for the purposes of the survey are omitted.

The non-response rate may also be higher depending on the organisation responsible for collection. From 2011, the collection has been outsourced and the non-response rate increased compared to previous years. For this reason, in the draft of the public contraction documents, there was made a lot of effort to reduce the non-response rate

12 Relevance

12.1 User needs

The survey's main user is the European Commission and Eurostat in particular, to whom all legally required obligatory information is provided. With this information, along with that of other Community countries, the European Digital Agenda's monitoring indicator is prepared, which shows the entrenchment of the information society in Europe.

Another important user is the National Observatory of Telecommunications and the Information Society of the Ministry of Economy and Business. Every year, they are provided a first draft of the questionnaire so they can propose the inclusion of some indicators for the Spanish Digital Agenda which are not included at the European level. However, these requests for additional questions can only be partly addressed as the Eurostat survey is already very extensive, especially in the case of phone interviews

The 14 Autonomous Communities' statistics and the one from the Madrid City Council offices are also users of the survey results and they are provided the microdata file of their area of competence for their own purposes.

Additionally, certain variables are included in order to meet the information requests of the International Telecommunication Union (ITU) and the indicators for the 2030 Sustainable Development Agenda.

Finally, our users include telecommunication businesses and Internet service providers, researchers, university professors, and individuals.

12.2 User satisfaction

The INE has carried out general user satisfaction surveys in 2007, 2010, 2013, 2016 and 2019 and it plans to continue doing so every three years. The purpose of these surveys is to find out what users think about the quality of the information of the INE statistics and the extent to which their needs of information are covered. In addition, additional surveys are carried out in order to acknowledge better other fields such as dissemination of the information, quality of some publications...

On the INE website, in its section Methods and Projects / Quality and Code of Practice / INE quality management / User surveys are available surveys conducted to date.(Click [next link](#))

All the obligatory information required annually by Eurostat is collected in the survey, which issues a report endorsing the data provided and their quality.

The needs of the other main users are met according to their appropriateness and the length of the questionnaire, as the information required by Eurostat is already very extensive and partly collected by phone.

12.3 Completeness

Completed information on the obligatory variables is provided, which is indicated annually by the Commission regulation.

The rate of available obligatory statistical results is 100%.R1=100%

13 Accuracy and reliability

13.1 Overall accuracy

The sample design attempts to minimize sampling errors and the different survey processes are aimed at eliminating or reducing survey errors as much as possible, both in the collection stage (response rate and filtering control) as well as in the later stages of editing and imputation.

Because of the specific features of the survey, the youth sample is under-represented whilst groups such as older people, retired and early retired and, to a lesser degree, people dedicated to household work, etc. are over-represented. The application of calibration techniques has solved these problems.

Furthermore, people with Spanish nationality responded to a considerably greater extent than foreigners. Consequently, the calibration by nationality was included along with the traditional calibration by age and sex.

On the other hand, the survey uses terms that are difficult to understand for people who do not use these technologies. For this reason, the option "I don't know/No response" is included for the questions on the household equipment variables

From the information on sampling, response rate, and analysis of non-response errors that are published on the INE web page, the users can assess the problems associated with this survey.

13.2 Sampling error

Since 2008, the sampling errors of the survey's main estimates have been published at the end of the detailed results tables. These can be accessed at:

https://www.ine.es/dyngs/INEbase/en/operacion.htm?c=Estadistica_C&cid=1254736176741&menu=resultados&idp=1254735976608

The standard errors (estimates of estimators' standard deviations) expressed in percentage for the national total in the 2021 survey for the most significant characteristics are:

Homes with at least one person aged 16 to 74 :

A1(Homes that have a computer): 0.47

A1(Homes that have Internet access with a broadband connection): 0.37

Persons aged 16 to 74:

A1(Persons who have used the internet in the last three months): 0.23

A1(Persons who have used the Internet at least once a week in the last 3 months): 0.26

A1(Persons who have used the internet daily): 0.36

A1(Persons who have made a purchase over the internet in the last 3 months): 0.58

For the special section of minors aged 10 to 15:

A1(Minors who have used a computer in the last 3 months): 0.73

A1(Minors who have used the Internet in the last 3 months): 0.59

Additional information about persons aged 75 or more:

A1(Persons who have used the internet in the last three months): 1.25

A1(Persons who have used the Internet at least once a week in the last 3 months): 1.22

A1(Persons who have used the internet daily): 1.11

A1(Persons who have made a purchase over the internet in the last 3 months): 0.73

13.3 Non-sampling error

Sampling errors can be found in the survey's methodology. These can be accessed at:

https://www.ine.es/en/metodologia/t25/t25304506620_en.pdf

The initial theoretical sample consisted of 25,611 households, of which 22,574 (88.1%) were surveyable.

Of the 25,611 households considered to be surveyable at the start, 14,839 households completed the questionnaire in full (Households surveyed or Net Sample). Thus, **the non-response rate** stands at 34.3%. A4=34.3%

The main and almost only partial non-response occurs with the variable of household monthly income, with a percentage of 10,7% of the effective sample. A5=10.7%

14 Timeliness and punctuality

14.1 Timeliness

In 2022, the time interval between the end of the reference period and the publication date of the definitive results was 100 days. TP2=100 days.

14.2 Punctuality

The survey is released according to the INE structural statistics availability calendar.

15 Coherence and Comparability

15.1 Comparability - geographical

Although the procedures are the same throughout the national territory, which means that the results from each Autonomous Community are completely comparable, due to the sample size in the Autonomous Cities of Ceuta and Melilla, the sampling errors in these cities were much higher than in the rest of the Spanish territory, meaning that the results obtained for these Cities should be treated with caution.

Moreover, as this survey follows Community regulations in this field, the results are comparable with those of other EU countries.

15.2 Comparability - over time

The number of comparable years in the time series published in 2022 is 17 (since 2006, the year in which the survey's methodology converged with the European methodology). CC2=17

15.3 Coherence - cross domain

The coherence of the information obtained is analysed against other public or private sources, with no problem with coherence detected that was not justifiable by the different methodology used. Thus, the following sources are consulted:

- the Red.es Telecommunications Market Commission (CMT) Household Panel for monitoring Internet penetration in households and the technology for accessing this, as well as the use of the Internet by individuals.
- CMT reports with information on businesses providing ICT services.

15.4 Coherence - internal

The obtained results are completely internally coherent as the software application for the collection of information controls possible inconsistencies in each questionnaire from the start. Moreover, once the information is aggregated in tables, the results are analysed in order to eliminate any inconsistencies that were not detected in the collection stage.

16 Cost and burden

16.1 Cost and burden

The estimated budgetary appropriation required to finance this statistical operation, as provided for in the 2022 Annual Programme, is 1,407.94 thousand euros.

The average time used for answering the survey questionnaire is 24.6 minutes

The Community Framework Regulation that regulates this survey imposes a limit on the response burden on respondents in the European questionnaire and this regulation is also followed in the Spanish survey.

17 Data revision

17.1 Data revision - policy

The INE of Spain has a policy which regulates the basic aspects of statistical data revision, seeking to ensure process transparency and product quality. This policy is laid out in the document approved by the INE board of directors on 13 March of 2015, which is available on the INE website, in the section "Methods and projects/Quality and Code of Practice/INE's Quality management/INE's Revision policy" ([link](#)).

This general policy sets the criteria that the different type of revisions should follow: **routine revision**- it is the case of statistics whose production process includes regular revisions-; **more extensive revision**- when methodological or basic reference source changes take place-; and **exceptional revision**- for instance, when an error appears in a published statistic-.

The results are definitive when they are published and they are not subject to revision.

In case that an error is detected and data subsequently modified, it will be addressed an explanatory note with this information in order to inform the users.

17.2 Data revision - practice

The results published each year are definitive.

18 Statistical processing

18.1 Source data

The data are obtained from a sample survey. Three-stage sampling was used with stratification by first-stage units. The first stage units are the census tracts. The second stage units are the main family homes and in the third stage, a person over 15 years old is selected from each home. Furthermore, in each home, all minors between 10 and 15 are investigated.

A framework of areas made up of the list of existing census tracts with reference to November 2015 and including changes that are made over time was used when selecting the sample.

The list of main family homes in each one of the survey's selected sections obtained from the most recent available Continuous Register of inhabitants was used to select second-stage units.

Within each Autonomous Community, the sections were grouped into strata according to the size of the municipality to which they belong.

For each Autonomous Community, an independent sample was designed that represented it, as one of the survey's objectives was to provide data to that level of disaggregation.

To meet this survey's objectives of providing estimates with a certain degree of reliability, a sample size of 2,500 census tracts has been established at the national and Autonomous Community level, with 14 or 15 initial households selected in each census tract. The distribution of the sample by the Autonomous Community is established through a compromise between uniform allocation and allocation that is proportional to the size of the Community. In this way, an attempt is made to guarantee a sufficient sample size that can provide reliable estimates for each Autonomous Community.

This research is a continuous survey that is carried out annually. In order, on the one hand, to incorporate the changes that occur in census tracts and, on the other, to avoid tiring the collaborating families and to give the opportunity for new families to be selected, the tract and household sample are partially renewed, establishing a rotation shift system. Rotation shifts are groups of sample tracts that are used to gradually incorporate changes into the sample. The number of sample tracts by stratum in each Autonomous Community is distributed between rotation shifts so that these are representative. This survey is a rotating panel with four rotation shifts.

To estimate the survey characteristics, the following types of estimators are considered:

Estimator for household data

Estimator for data on persons aged 16 and over.

Estimator for data on persons aged 10-15.

Ratio estimators are used in all cases, calibrated according to the information from external sources.

For more detail on the sample design, see the methodological report, which can be accessed at:

18.2 Frequency of data collection

The ICT_H survey is an annual survey.

18.3 Data collection

In 2017, for the first time, data were collected using three procedures:

- Computer-Assisted Web Interview (CAWI): The interviewee completes the questionnaire through the internet at any time during the collection period.

- Telephone interview in a CATI (Computer Assisted Telephone Interview) center: the households included in the previous year's sample that have not responded through CAWI are interviewed by telephone from a CATI center, wherever a telephone number is available. The interviewer does not use paper questionnaires, but rather directly records the respondent's responses in an electronic questionnaire.

- Computer-Assisted Personal Interview (CAPI): The interviewer does not use paper questionnaires, but rather has a portable computer in which the questionnaire is available and the interviews are completed using this portable computer.

Using this method, households from the sections with a new sample and households that were already included in the sample of the previous year that does not have a contact telephone are interviewed if they have not completed the questionnaire through the Internet.

In this way, there is a third collection possibility for these dwellings. However, this third way has been used residually, due to the lack of availability of resources for it.

For more information, see the following link to this survey's methodology:

https://www.ine.es/en/metodologia/t25/t25304506620_en.pdf

18.4 Data validation

A filtering system is used to filter entered data that detects errors and inconsistencies. Then a second filtering process is applied in each collection centre and, finally, a centralised filtering is carried out with a special focus on the homogenisation of the codification of variables that need it and the comparison of results with those obtained in previous years.

18.5 Data compilation

The filtered CAWI and CATI files are integrated into a single file and then the codification of the variables that need reviewing are reviewed. To obtain the results, ratio estimators are used, and calibrated according to information from external sources.

For the results of households, the final estimator is obtained by applying reweighting techniques using CALMAR software. The estimate of the total main household classified according to their size (5 sizes) for each Autonomous Community, with reference to the 15th of June 2022, was used as an auxiliary variable. Until 2012, the distribution of households used came from the Labour Force Survey. Since 2013, this information is an exogenous source and comes from the updated estimate of the total households that the last population and household censuses and the Population Figures use as their information base.

For the results of people aged 16 and over, reweighting techniques are applied to the age, sex, and nationality groups at the level of the Autonomous Community (using CALMAR). The population used is an estimate of the population residing in main-family homes on the 15th of June 2022 deduced from the Population Figures.

For the results of people aged 10-15, the estimator used to obtain information about these people is similar to that described in the section about households, with the exception that the auxiliary variables used for calibration are estimates of the population residing in main family households aged 10-15 by sex in each Autonomous Community, deduced from the Population Figures.

18.6 Adjustment

No seasonal adjustment is applied. Calibration techniques are applied in an attempt to correct non-response and its possible biases.

19 Comment

19.1 Comment
